

**UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA**

Tire Service Equipment Mfg. Co., Inc.,

Civil No. 13-2996 (DWF/TNL)

Plaintiff,

v.

**MEMORANDUM
OPINION AND ORDER**

Gaither Tool Co.,

Defendant.

Alan M. Anderson, Esq., and Aaron C. Nyquist, Esq., Alan Anderson Law Firm LLC,
counsel for Plaintiff.

Erin O. Dungan, Esq., and Michael M. Lafeber, Esq., Briggs & Morgan, PA; and Mark E.
Wiemelt, Esq., Wiemelt Knechtel, counsel for Defendant.

INTRODUCTION

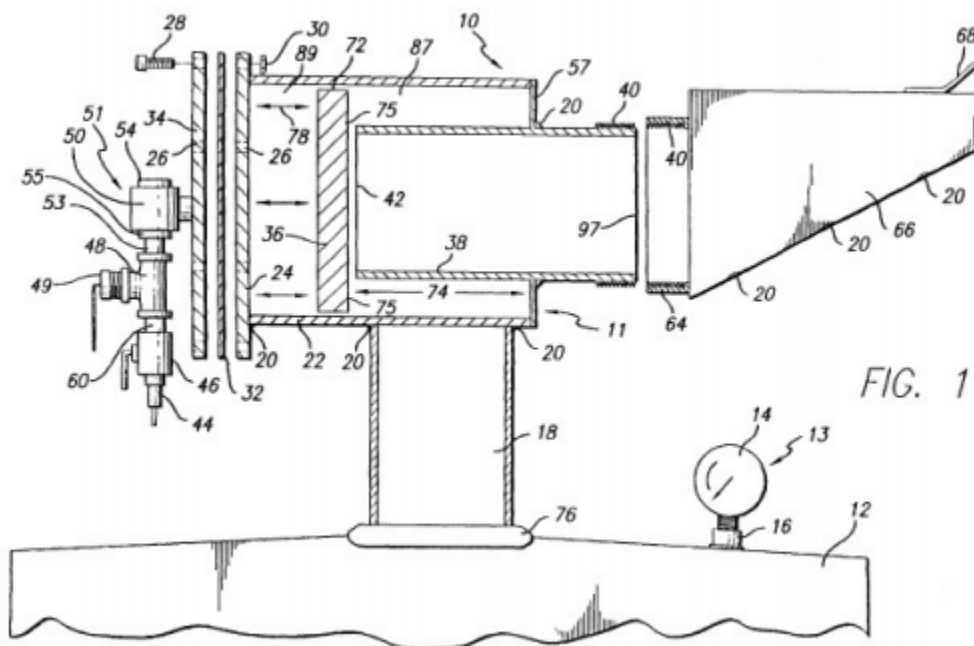
This matter is before the Court on the issue of patent claim construction pursuant
to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996).

BACKGROUND

This litigation involves allegations by Plaintiff Tire Service Equipment Mfg. Co.,
Inc. (“Plaintiff”) that Defendant Gaither Tool Co. (“Defendant”) is infringing one or
more claims of U.S. Patent No. 6,179,033 B1, entitled “Method and Apparatus for
Seating Tubeless Tires” (the “’033 Patent”), through the manufacture and sale of the
Bead Bazooka apparatus for seating tubeless tires. (Doc. No. 1, Compl., ¶¶ 4-7, 9, 13.)

The '033 Patent discloses and the asserted claims are directed at a method and apparatus for seating a tubeless tire onto a rim. (Compl. ¶ 4, Ex. A ("033 Patent").)

A copy of Figure 1 from the '033 Patent, which depicts an illustrative embodiment of the apparatus, is provided below:



Per the illustration above and the specification, the inflation tank 12 is filled with compressed air via the fill/quick-release port. The compressed air fills and pressurizes the control section 89 of charging reservoir 22. The air pressure in the control section 89 forces piston 36 to move and seal the end 42 of the outlet nipple 38. The compressed air is unable to pass through the outlet nipple 38. Air then leaks between the piston 36 and the inner wall of the charging reservoir 22 to fill the inflation tank 12 with compressed air.

After the inflation tank 12 is filled with compressed air, the ball valve 46 is closed.

The nozzle 66 is then positioned so its outlet is placed between the bead of the tire and rim. The user presses a discharge trigger 49, which causes a quick release valve 50 to discharge compressed air from the control section 89 and out the quick-release exhaust port 54. The reduction of pressure in the control section 89 causes the piston 36 to move away from the end 42 of the outlet nipple 38. When the seal between the piston 36 and end 42 is broken, compressed air is explosively released from the inflation tank 12, through the outlet section 87, through the outlet nipple 38, through the nozzle 66 and into the tire. The pulse of compressed air rapidly expands the tire, pushing the bead of the tire against the wheel rim.

The inventor of the '033 Patent sought to solve several problems in the field of tire bead seaters, including: (1) reducing the cost to manufacture tire bead seaters; (2) overcoming sensitivity to air leaks; (3) being user friendly by reducing kickback; and (4) increasing effectiveness by providing a fast release of air from the storage tank. ('033 Patent at c. 3, ll:7-10.)

In the Complaint, Plaintiff alleges that Defendant's manufacture and sale of its Bead Bazooka product infringes certain claims of the '033 Patent. (Compl. ¶¶ 8-16.) Defendant denies Plaintiff's allegations and asserts counterclaims seeking declaratory judgments of invalidity and non-infringement.¹

¹ Defendant has indicated that it has reserved its arguments on indefiniteness and obviousness and will address grounds for invalidity after the Court has construed the claims. (Doc. No. 111 at 15 n.3.)

DISCUSSION

I. Claim Construction Principles

Patent claim construction, i.e., the interpretation of the patent claims that define the scope of the patent, is a matter of law for the court. *Markman v. Westview*

Instruments, Inc., 52 F.3d 967, 970-71 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996).

Proper claim construction requires an examination of the intrinsic evidence of record, including the claim language, the specification, and the prosecution history. *Bell Atl.*

Network Servs., Inc. v. Covad Commc'ns Grp., Inc., 262 F.3d 1258, 1267 (Fed.

Cir. 2001); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

The starting point for claim construction is a review of the words of the claims

themselves. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*)

(citation omitted); *see also Vitronics*, 90 F.3d at 1582 (“First, we look to the words of the

claims themselves, both asserted and unasserted, to define the scope of the patented

invention.”). The words of a claim generally carry “the meaning that the term would

have to a person of ordinary skill in the art at the time of the invention.” *Phillips*, 415

F.3d at 1313; *see also Bell Atl.*, 262 F.3d at 1367 (“As a starting point, we give claim

terms their ordinary and accustomed meaning as understood by one of ordinary skill in

the art.”).²

² Plaintiff submits that the definition of a person of ordinary skill in the art with respect to the '033 Patent is one skilled in the art of designing tire servicing equipment in 1999. (Doc. No. 109 at 7.) Plaintiff further submits that such a person would have at least an associate's degree in mechanics or mechanical engineering technology, or its

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Claims must also be read in view of the specification. *Phillips*, 415 F.3d at 1315. The specification is always “highly relevant” to claim construction and “the single best guide to the meaning of a disputed term.” *Id.* (citing *Vitronics*, 90 F.3d at 1582). The specification “necessarily informs the proper construction of the claims.” *Id.*, 415 F.3d at 1316 (explaining that the claims must be construed so as to be consistent with the specification) (citation omitted).

Generally, there is a heavy presumption in favor of the ordinary meaning of claim language, as understood by one skilled in the art. *Bell Atl.*, 262 F.3d at 1268. However, the specification may prescribe a special definition given to a claim term that differs from the meaning it would otherwise possess, or it may reveal a disavowal or disclaimer of claim scope by the inventor. *Phillips*, 415 F.3d at 1316. In such cases, the intention that is expressed by the inventor in the specification is dispositive. *Id.* The Court may not, however, import limitations from the specification into the claims. *Id.* at 1323. To avoid importing limitations from the specification into the claims, the Court considers that the

(Footnote Continued From Previous Page)

equivalent, and at least two years of work experience in the field of mechanical design. Defendant contends that there is no need to determine level of skill in the art because the technology of the '033 Patent is not complex. (Doc. No. 121 at 10.) Defendant further contends that if the Court deems it necessary to define a person of ordinary skill in the art, that person would need at least two years of work experience in the field of designing tire-servicing equipment in 1999. (*Id.*) The Court declines to define, at least at this stage of the litigation, a person of ordinary skill in the art. The technology is not complex and the claims can be construed based on the intrinsic evidence alone. In addition, the parties' positions on the definition of skill level are similar and any differences would not change the Court's claim construction.

purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so. *Id.*

The Court should also consider the patent's prosecution history, which provides evidence of how the United States Patent and Trademark Office ("USPTO") and the inventor understood the patent. *Id.* The prosecution history "consists of the complete record of the proceedings before the [USPTO] and includes the prior art cited during the examination of the patent." *Id.* The prosecution history may "inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.* (citing *Vitronics*, 90 F.3d at 1582-83). The doctrine of prosecution disclaimer "preclude[s] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution." *Omega Eng'g Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003).

A court may, in its discretion, consider extrinsic evidence, though such evidence is less reliable than intrinsic evidence. *Phillips*, 415 F.3d at 1317-18. In most situations, intrinsic evidence will resolve any ambiguity in a disputed term, and when it does so, the court may not rely on extrinsic evidence. *Vitronics*, 90 F.3d at 1583.³

³ Here, as discussed below, the meaning of the disputed claim limitations can be determined with intrinsic evidence, and there is no need to rely on extrinsic evidence.

II. The '033 Patent

In this action, Plaintiff alleges that Defendant's Bead Bazooka tire bead seaters infringe claims 1-5, 7, 10-13 and 18 of the '033 Patent. Claims 1, 13 and 18 are independent claims. Claims 2-5, 7, and 10-12 are dependent claims. Claims 1-5, 7, 10-12 and 18 are apparatus claims and claim 13 is a method claim.

A. "charging reservoir"

The parties dispute the meaning of the term "charging reservoir" as it appears in claims 1-4, 9-12, and 18 of the '033 Patent. Independent Claim 1 of the '033 Patent reads:

1. An apparatus for seating a bead of a tubeless rim comprising:
 - a *charging reservoir* having a control section with a combination fill/quick-release port and an outlet section with an inlet and said *charging reservoir* also having an outlet, said *charging reservoir* having a predetermined cross-sectional area;
 - an inflation tank having a predetermined volume and pressure, said inflation tank having a combination inlet/outlet, wherein the inlet/outlet of said inflation tank is connected to the inlet of the outlet section of said *charging reservoir*;
 - a piston having a control section side and a outlet section side, said piston moveably disposed within the control section of said *charging reservoir*, said piston having a cross-sectional area corresponding to the cross-sectional area of the control section of said *charging reservoir* such that filling the control section of said *charging reservoir* with pressurized air via the fill/quick-release port, causes said piston to be releasably urged against the outlet of the outlet section of said *charging reservoir* substantially preventing the pressurized air from exiting the outlet in the outlet section of the *charging reservoir* while permitting the pressurized air to bypass said piston to fill said inflation tank and the outlet section of said *charging reservoir* so that air pressure within the outlet and control sections of said *charging reservoir* and said inflation tank are at substantially the same pressure and wherein quickly releasing the pressurized air within the control section of said *charging reservoir* via the

fill/quick-release port causes said piston to be propelled away from the outlet of said *charging reservoir* thus releasing the pressurized air stored in said inflation tank to be substantially explosively released through the outlet of the outlet section of said *charging reservoir* to seat the bead of the tire on the rim.

(’033 Patent at c. 9, ll:48-67 - c. 10, ll:1-18 (emphasis added).)

Plaintiff submits that the term should be construed as “a chamber containing pressurized gas (e.g. compressed air) and having a control member (e.g. a movable piston), a control section, and an outlet section as disclosed in the ’033 Patent.”

Defendant submits that the term should be construed so as to require that the charging reservoir “charges (fills and pressurizes) the air stored within a physically distinct and separate tank.”⁴

The parties agree that the term “charging reservoir” is a “chamber containing pressurized gas” and that the charging reservoir includes a control section, but disagree as to the remainder of the term’s construction. The parties’ main dispute centers on whether the charging reservoir must be “a physically distinct and separate tank.”

Defendant argues that the intrinsic evidence requires: (1) a charging reservoir to be physically distinct and separate from the inflation tank/storage tank; and (2) a charging reservoir (as opposed to a storage tank) that includes a control section. Plaintiff argues that the intrinsic evidence does not demonstrate an intent to limit the claims to embodiments having a charging reservoir that is a “physically distinct and separate tank.”

⁴ Defendant submits that the charging reservoir 22 must be physically distinct and separate from the inflation tank/storage tank 12, and that they are separated by the nipple 18, which Defendant claims is the “combination inlet/outlet.”

Plaintiff submits that Defendant's proposed limitation would improperly import a limitation from a preferred embodiment without a clear intent demonstrated by the patentee to so limit the claim scope. Plaintiff further submits that Defendant has not identified any intrinsic evidence demonstrating that the patentee disclaimed devices with a charging reservoir within the inflation tank.

Figure 1 of the '033 Patent shows a physically distinct charging reservoir 22 located on top of the inflation tank 12 and separated by nipple 18. ('033 Patent at Fig. 1.)

This configuration is also discussed in the Abstract of the '033 Patent:

A method and apparatus for bead seating a tubeless tire onto a rim. Air stored in a portable tank is released as a single pneumatic pulse having an extremely fast rise time. This is accomplished using a charging reservoir having a fill/quick-release port, an inlet and an outlet. A piston divides the charging reservoir into two sections, a control section containing the fill/quick-release port and an outlet section containing the inlet and the outlet. The portable tank is connected to the inlet of the outlet section.

In addition, the Summary of the Invention reads, in relevant part:

The invention is an apparatus for seating the bead of a tubeless tire on a rim. A charging reservoir . . . is provided. Said charging reservoir is also provided with a fill/quick-release port, an inlet and an outlet. An inflation tank having a predetermined volume and an inlet/outlet is provided, wherein the inlet/outlet of said inflation tank is connected to the inlet of said charging reservoir.

('033 Patent, c. 3 at ll:44-51.)

Defendant argues that both the abstract and the summary describe the inflation/storage tank as physically distinct and separate from the charging reservoir, and therefore it must be so limited in the claims. In addition, Defendant argues that the language in claims 1 and 18 of the '033 Patent suggest that the charging reservoir and the

inflation (storage) tank must be separate by mentioning them as separate elements in separate clauses. For example, claim 1 states that the “inlet/outlet of said inflation tank is connected to the inlet of the outlet section of said charging reservoir.” Similarly, claim 18 states that the “storage tank is connected to the inlet of the charging reservoir.”

The Court acknowledges that Figure 1 of the '033 Patent depicts an embodiment of the claimed apparatus with a charging reservoir that is separate from the inflation tank. However, absent evidence of a clear intent on the part of the inventor to disclaim other embodiments with a charging reservoir within the inflation tank, it is improper to read that limitation into the claim. *See, e.g., Arlington Indus., Inc. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1254 (Fed. Cir. 2011) (explaining that a patented invention is not limited to inventions depicted in figures or a single embodiment unless there is a clear intent to so limit). The additional portions from the patent specification do not provide such intent. Therefore, the Court declines to so limit the construction of “charging reservoir.”⁵

The Court concludes that Plaintiff’s proposed construction is supported by the intrinsic evidence. Accordingly, the Court construes “charging reservoir” as “a chamber

⁵ Defendant also argues that the “charging reservoir” includes control section 89. Claim 1 reads “charging reservoir *having* a control section” and repeatedly states “the control section of said charging reservoir.” ('033 Patent at c. 9, ll:50- c. 10, ll:1-18 (emphasis added).) The specification similarly refers to the “control section **89** of charging reservoir **22**.” (*Id.* at c. 9, ll:28-29 & 33-34.) In addition, the Abstract states: “A piston divides the charging reservoir into two sections, a control section . . . and an outlet section.” (*Id.* at Abstract.) Plaintiff submits that the construction of “control section” is undisputed. (Doc. No. 122 at 6.) Moreover, Plaintiff’s proposed construction provides for a “charging reservoir . . . having a control section.” Thus, the Court concludes that the “charging reservoir” includes control section 89.

containing pressurized gas (e.g. compressed air) and having a control member (e.g. a movable piston), a control section, and an outlet section.”

B. “a combination fill/quick release port”

The parties dispute the meaning of the term “a combination fill/quick release port” as it appears in claims 1-5, 10-12 and 18 of the ’033 Patent: “[A] charging reservoir having a control section with a combination fill/quick-release port. . . .” (*See, e.g.*, ’033 Patent at c. 9, ll:51-52 (emphasis added).)

Plaintiff asserts that the term should be construed as:

One or more ports that work in combination to permit the filling and quick release of pressurized gas (e.g. compressed air) and the quick release of pressurized gas from the inflation tank and charging reservoir. A port is an opening for intake or exhaust of a fluid, such as compressed air, especially in a valve seat, or valve face or a place of access to a system.

Defendant originally submitted that the term should be construed so as to require that a “combination fill/quick release port” has an internal diameter that is 3/8 inch or larger, but acknowledged during oral argument that it no longer seeks that limitation. (Doc. No. 132 (“Hearing Tr.”) at 12-13.) Presently, Defendant seeks a construction that requires a “combination fill/quick release port” to both fill the control section of the charging reservoir and release pressurized air from the control section through the same port and that the combination fill/quick-release port be a single, unitary port, rather than two physical distinct and separate ports.

Plaintiff submits that Defendant’s proposed construction attempts to improperly import two limitations into the claim: (1) an operational limitation (“combination fill/quick release port” both fills the control section of the charging reservoir and releases

pressurized air from the control section through the same port); and (2) a numerical limitation (“combination fill/quick release port” must be a single, unitary port, rather than two physically distinct and separate ports”). Instead, Plaintiff argues that the intrinsic evidence supports its construction. Specifically, Plaintiff points to the following:

Said charging reservoir is also provided with a fill/quick-release port
When said charging reservoir and said inflation tank is pressurized with air via the fill/quick-release port of said charging reservoir, said piston is moveably urged against the outlet of said charging reservoir. . . . When the pressurized air within said charging reservoir is quickly released via the fill/quick release port of said charging reservoir, said piston substantially instantaneously moves away from the outlet of said charging reservoir. . . .

(’033 Patent at c. 3, ll:47, 52-55, 58-63.) In addition, Plaintiff asserts that the specification refers to the fill/quick-release ports as the exhaust port 54 and air coupler 44. (*See id.* at c. 5, ll:19-20 (“Exhaust port **54** is left open so that exiting air is not restricted when valve **50** is actuated.”); *id.* at c. 9, ll:19-20 (“To use invention **10**, an air hose (not shown) is attached to air coupler **44** and ball valve **46** is opened.”). Plaintiff submits that the specification demonstrates that the combination of these two ports allows for the apparatus to be filled with air and for air to be released. (*See id.* at c. 9, ll:32-34 (“Trigger **49** is depressed which causes the air within the control section **89** of charging reservoir **22** to be released from the port **54** of quick release valve **50**.”).) Plaintiff submits that in Figure 1 of the ’033 Patent, air enters the air coupler 44 and fills the charging reservoir 22, and air is released from the control section 89 and exits via exhaust port 54.

Defendant argues that the claim language is limited for the following reasons. First, Defendant points out that the specification uses only singular terms when referring

to the term “port” (“a port” and “the port”). Defendant also argues that the use of the “/” (i.e., “inlet/outlet”) refers to a single port. For example, Defendant cites to the Abstract, which reads in part: “charging reservoir having a fill/quick-release port, an inlet and an outlet . . . a control section containing the fill/quick release port Air that is introduced into the fill/quick-release port fills the control section of the charging reservoir.” (’033 Patent at Abstract.) In addition, Defendant points out that the Summary of the Invention refers to a “fill/quick-release port.” (*See, e.g., id.* at c. 3, ll:46-47, 52-55, 58-62.)

Defendant also disputes Plaintiff’s position that items 44 and 54 are the “combination fill/quick-release port.” Defendant argues that during the prosecution of the ’033 Patent, the applicant stated that 52 was the fill/quick release port. (Doc. No. 112, Wiemelt Decl. ¶ 4, Ex. B. at 1748.) Specifically, the applicant stated: “The applicant’s claimed invention . . . fills control section 89 with pressurized air via the fill/quick release port 52 . . . [and] the air pressure is rapidly released via port 52.” (*Id.*) In the ’033 Patent itself, number 52 refers to the “nipple,” and Defendant submits that “if anything” the combination fill/quick-release port is nipple 52. Defendant also argues that the air coupler 44 and the exhaust port 54 are not designed to work in combination because they do not work at the same time. In support, Defendant cites to the following portion of the Detailed Description of the Invention:

As shown in FIG. 1, fill/quick-release assembly **51** is attached to invention **10** by way of a threaded on end (TOE) nipple **52** which is connected to the charging head plate **34**. Nipple **52** is preferably 3/8 inch sized fitting. Attached to nipple **52** is quick release valve **50** However, any type of valve which permits the air to be very rapidly

exhausted from charging reservoir **22** could also be used. Further, the inventor has found that a 3/8 inch or larger ball-type of valve could be substituted for quick release valve **50**. However, the performance of invention **10** will be degraded somewhat due to slower rise time found with this type of design as discussed above.

(*Id.* at c. 5, ll:7-18.)

Upon examination of the intrinsic evidence, the Court concludes that the specification does not support a construction that requires that the same port be used to both fill and release from the control section. Defendant's reliance on references to the embodiment depicted in Figure 1 is not persuasive. First, while Defendant maintains that Figure 1 shows only one port through which air fills and is released (namely, the unnumbered portion that would align with nipple **52**), the Court concludes that Figure 1 actually discloses the use of two separate ports to fill and release air—exhaust port 54 and air coupler 44. In addition, even if Figure 1 depicted a single port, there is no clear disavowal of the use of multiple fill/quick-release ports, and a Court may not read a limitation into the claims without evidence of such intent. *See Arlington*, 632 F.3d at 1254. Moreover, the use of the singular terms “a” and “the” does not limit the claims, as the indefinite article rule provides that the use of the words “a” or “an” in a patent generally carry the meaning of “one or more.” *See 01 Communique Lab., Inc. v. LogMeIn, Inc.*, 687 F.3d 1292, 1297 (Fed. Cir. 2012). Further, Defendant has not provided evidence to support that the use of the forward slash (“/”) was used to designate a single port. Finally, Defendant's prosecution history disclaimer argument is unavailing as there is no evidence that the patentee disavowed the use of multiple ports, and while

the patentee did refer to “nipple 52” as a “quick/fill release port,” the claim term “combination quick/fill release port” was not defined during prosecution.

Instead, the Court concludes that neither the claim language nor the specification supports a numerical or operational limitation. The Court construes “combination fill/quick-release port” as “one or more ports that work in combination to permit the filling and quick release of pressurized gas (e.g. compressed air) and the quick release of pressurized gas from the inflation tank and charging reservoir. A port is an opening for intake or exhaust of a flue, such as compressed air, especially in a valve seat, or valve face or a place of access to a system.”

C. “inflation tank”/“storage tank”

The parties dispute the meaning of the term “inflation tank/storage tank” as it appears in claims 1, 2 and 18 of the ’033 Patent:⁶ “[A]n inflation tank having a predetermined volume and pressure, said inflation tank having a combination inlet/outlet, wherein the inlet/outlet of said inflation tank is connected to the inlet of the outlet section of said charging reservoir.” (’033 Patent at c. 9, ll:56-59.)

Plaintiff seeks the following construction for “inflation take/storage tank:” “A pressure vessel that stores pressurized gas (e.g. pressurized air) for the purpose of inflating and seating a tubeless rubber tire onto a wheel rim.” At oral argument, Plaintiff indicated that the language “for the purposes of inflating and seating a tubeless tire onto a

⁶ The patentee used the terms “inflation tank” and “storage tank” interchangeably in the specification and the claims. (*See, e.g.*, ’033 Patent at c. 4, ll:34 (“inflation tank **12**”); c. 6, ll:51 (“storage tank **12**”).)

wheel rim” is not necessary. (Hearing Tr. at 61.) Defendant originally submitted that the term should be construed so as to require that the inflation tank has a capacity of at least 1,500 cubic inches, but conceded during oral argument that it no longer seeks that limitation. (*Id.* at 12-13.)

The specification supports Plaintiff’s proposed construction. In particular, the specification discloses that “inflation tank” is a “pressure vessel” whose “actual size and pressure rating . . . will vary according to the size of the tire to be sealed and to the pressure of the air stored therein.” (’033 Patent at c. 4, ll:34, 39-43.) In addition, the specification explains that “[w]hen the pressurized air from said inflation tank is released . . . the airflow is directed between the bead of the tire and the rim, thereby seating the tire on the rim.” (*Id.* at c. 4, ll:2-6.)

Based on the intrinsic evidence, the Court concludes that the term “inflation tank/storage tank” is properly construed as “a pressure vessel that stores pressurized gas (e.g. pressurized air).”

D. “predetermined volume”

The phrase “inflation tank having a predetermined volume and pressure” appears in the second clause of claim 1. (’033 Patent at c. 9, ll:56-57.)

Plaintiff submits that this phrase is properly construed as “an inflation tank having an internal storage volume that contains a pressurized gas (e.g. compressed air) and a specified pressure rating for the pressurized gas.” Defendant originally submitted that the term should be construed so as to require that the inflation tank has a capacity of at least 1,500 cubic inches but no longer seeks that limitation. (Hearing Tr. at 12-13.)

The specification supports Plaintiff's proposed construction. In particular, the specification discloses that "inflation tank" is a "pressure vessel" whose "actual size and pressure rating . . . will vary according to the size of the tire to be sealed and to the pressure of the air stored therein." ('033 Patent at c. 4, ll:34, 39-43.) In addition, the specification explains that "[w]hen the pressurized air from said inflation tank is released . . . the airflow is directed between the bead of the tire and the rim, thereby seating the tire on the rim." (*Id.* at c. 4, ll:2-6.) According to the specification, "[t]he preferred size of tank **12** specified will enable the user to seat the beads of most standard truck tire sizes." (*Id.* at c. 4, ll:42-44.)

The Court concludes that this phrase is properly construed as "an inflation tank having an internal storage volume that contains a pressurized gas (e.g. compressed air) and a specified pressure rating for the pressurized gas."

E. "inflation tank having a combination inlet/outlet"

The parties dispute the meaning of the phrase "inflation tank having a combination inlet/outlet" as it appears in claim 1: "said inflation tank having a combination inlet/outlet, wherein the inlet/outlet of said inflation tank is connected to the inlet of the outlet section of said charging reservoir." ('033 Patent at c. 9, ll:56-60.)

Plaintiff submits that this phrase is properly construed as:

An inflation tank having an inlet port for filling the tank and the charging reservoir with pressurized gas (e.g. compressed air), and having an outlet for releasing an explosive pulse of pressurized gas from the inflation tank in order to seat a tubeless rubber tire onto a wheel.

Defendant originally submitted that the phrase should be construed so as to require that the inflation tank has a capacity of at least 1,500 cubic inches, but no longer seeks that limitation. (Hearing Tr. at 12-13.) In addition, Defendant submits that the phrase requires that the combination inlet/outlet be a single, unitary physical element, rather than two physically distinct and separate elements, and that the “combination inlet/outlet” is separate from the “combination fill/quick-release port.” Defendant asserts that the specification of the ’033 Patent does not use or define “a combination inlet/outlet,” and instead, the Summary refers to “[a]n inflation tank having a predetermined volume and an inlet/outlet is provided, wherein the inlet/outlet of said inflation tank is connected to the inlet of said charging reservoir.” (’033 Patent at c. 3, ll:48-51.) Defendant points out that the Description of the Invention does not include a “combination inlet/outlet” and that the drawings do not include reference numbers for the same. Moreover, Defendant points out that the specification and claims of the ’033 Patent use the singular (“an” and “the”) in connection with the term “inlet/outlet.” In addition, Defendant submits that the specification uses “/” to designate a single, unitary physical element.⁷ Finally, Defendant argues that because both phrases (“combination inlet/outlet” and “combination fill/quick-release port”) appear in the claim, the “combination inlet/outlet” and “combination fill/quick-release port” must be separate.

⁷ Defendant concedes that the indefinite article rule does not prevent “the combination inlet/outlet language of claim 1 from encompassing a device having more than one “combination inlet/outlet.” (Doc. No. 121 at 27.) Defendant, however, maintains that each “combination inlet/outlet” must be one port—meaning each “combination inlet/outlet” cannot include a separate inlet and outlet.

Here, the specification refers to “[a]n inflation tank having a predetermined volume and an inlet/outlet is provided, wherein the inlet/outlet of said inflation tank is connected to the inlet of said charging reservoir.” (’033 Patent at c. 3, ll:48-51.) The specification also provides that “substantially all of the air in inflation tank **12** is released through outlet nipple **38**.” (*Id.* at c. 7, ll:20-21.) Figure 1 illustrates an apparatus where air can enter the air coupler 44, filling the charging reservoir 22, and then filling inflation tank 12 through the inlet nipple 18. The compressed air then explosively exists through the outlet nipple 38. Thus, Figure 1 depicts an embodiment wherein the air coupler 44 and nipple 18 work in combination as an inlet for the inflation tank. (’033 Patent at FIG. 1.)

Again, Defendant attempts to import both numerical (only one inlet/outlet) and operational (combination inlet/outlet port must be separate from combination fill/quick-release port) limitations. As discussed above, the indefinite article rule provides that the use of “a” or “an” does not limit the term to only one. Moreover, Defendant does not point to intrinsic evidence that demonstrates that the patentee intended to limit this claim term numerically to “only one inlet/outlet.” Finally, there is no evidence in the intrinsic record that would justify requiring that “combination inlet/outlet” must be separate from the “combination fill/quick-release port.”

The Court therefore concludes that “inflation tank having combination inlet/outlet” is properly construed as “an inflation tank having an inlet port for filling the tank and the charging reservoir with pressurized gas (e.g. compressed air), and having an

outlet for releasing an explosive pulse of pressurized gas from the inflation tank in order to seat a tubeless rubber tire onto a wheel.”

F. “quick-release valve”

The parties dispute the meaning of the phrase “quick-release valve” as it appears in dependent claim 3. Claim 3 reads: “The apparatus of claim **1** wherein the pressurized air within the control section of said charging reservoir is released via a quick-release valve.” (’033 Patent at c. 10, ll:27-29.)

Plaintiff submits that this phrase is properly construed as:

A valve that releases pressurized gas (e.g. compressed air) from the control section of the charging reservoir, thus quickly and explosively releasing a pulse of pressurized gas from an inflation tank to inflate and seat a tubeless rubber tire onto a wheel rim. A quick release valve can be any type of valve which permits air to be very rapidly exhausted.

Defendant originally argued that the “quick-release valve” must have an internal diameter that is 3/8 inch or larger, but no longer seeks that limitation.

The specification explains the following with respect to “quick-release valve”:
 “Trigger **49** is depressed which causes the air within the control section **89** of charging reservoir **22** to be released from port **54** of quick release valve **50**.” (*Id.* at c. 9, ll:33-34.)
 In addition, the specification provides, with respect to “quick release valve **50**” that “any type of valve which permits the air to be very rapidly exhausted from charging reservoir **22** could also be used.” (*Id.* at c. 5, ll:12-14.)

The Court concludes that Plaintiff’s proposed construction is supported by the intrinsic evidence. Therefore, the Court construes “quick-release valve” as follows:

A valve that releases pressurized gas (e.g. compressed air) from the control section of the charging reservoir, thus quickly and explosively releasing a pulse of pressurized gas from an inflation tank to inflate and seat a tubeless rubber tire onto a wheel rim. A quick release valve can be any type of valve which permits air to be very rapidly exhausted.

G. “control volume”⁸

The parties dispute the meaning of the phrase “control volume” as it appears in claim 13. (’033 Patent at c. 11, ll:5-8.) Claim 13 reads in part: “A method for seating a bead of a tubeless tire on a rim comprising the steps of: a) providing a control volume, an outlet volume with an outlet and a storage volume, said volumes being dimensioned to contain air at a predetermined pressure” (*Id.*)

Plaintiff submits that “control volume” is properly construed as “the volume of pressurized gas (e.g. compressed air) in the control section of the charging reservoir.”

Defendant submits that “control volume” must be dimensioned to contain air at a predetermined pressure, meaning that it is capable of being a closed or self-contained volume that is not open to the atmosphere.

Figure 1 of the ’033 Patent depicts control section **89** as an area inside the charging reservoir **22** and behind the piston **36**. The specification explains that “when piston **36** is urged against end **42** of nipple **38**, piston **36** substantially closes off the control section **89** from the outlet section **87** of charging reservoir **22**, thus positioning piston **36** away from the opening provided by nipple **18** which is connected to the outlet

⁸ While the terms control volume, outlet volume, and storage volume all appear in the same phrase, the Court construes the terms separately.

section **87**.” (’033 Patent at c. 5, ll:56-58.) The specification also explains that air flow is permitted through the device (or “past the piston **36** in either direction, any small amount of air which might leak from control area will be replenished from outlet area **87** and storage tank **12**”) so that “essentially the same pressure will be kept within the control area **89**, outlet area **87** and storage tank **12**.” (*Id.* at c. 6, ll:45-52.)

The Court concludes that Defendant’s proposed construction—which would require that it be capable of being a closed or self-contained volume that is not open to the atmosphere—is inconsistent with the specification. Namely, the construction would read out the preferred embodiment disclosed in Figure 1 from the claim. As depicted in Figure 1, control section 89 is not capable of being a closed or self-contained volume because it is in communication with outlet section 87. Moreover, even when filled with compressed air, air can move between the control section 89, outlet section 87, nipple 18, and storage tank 12. (*See* ’033 Patent at Abstract (“Since the piston is a loose fit, air is able to slowly leak past the piston and fill the outlet section of the charging reservoir.”).) In addition, Defendant’s proposed construction is at odds with the device being insensitive to leaks, a cited benefit of the invention. In particular, the patentee explained that small air leaks are preferable for safety reasons. (*Id.* at c. 6, ll:41-60.) Requiring control volume to be closed or self-contained is inconsistent with the specification.

The Court instead concludes that Plaintiff’s proposed construction is consistent with the ordinary meaning of the phrase and is supported by the intrinsic evidence. Thus, “control volume” is construed as “the volume of pressurized gas (e.g. compressed air) in the control section of the charging reservoir.”

H. “outlet volume”

The parties dispute the meaning of the phrase “outlet volume” as it appears in claim 13. (’033 Patent at c. 11, ll:5-8.) Claim 13 reads in part: “A method for seating a bead of a tubeless tire on a rim comprising the steps of: a) providing a control volume, an outlet volume with an outlet and a storage volume” (*Id.*)

Plaintiff submits that “outlet volume” is properly construed as “the volume of pressurized gas (e.g. compressed air) in the outlet section of the charging reservoir.” As with “control volume” above, Defendant submits that “outlet volume” must be dimensioned to contain air at a predetermined pressure, meaning that it is capable of being a closed or self-contained volume that is not open to the atmosphere.

Figure 1 of the ’033 Patent depicts outlet section 87 as an area inside the charging reservoir 22 and in front of the piston 36. As explained above, the specification demonstrates that air will flow through the device so that “essentially the same pressure will be kept within the control area 89, outlet area 87, and storage tank 12. (*Id.* at c. 6, ll:51-52.)

For reasons similar to those discussed above with respect to the Court’s construction of “control volume,” the Court concludes that Defendant’s proposed construction for “outlet volume”—which would require that it be capable of being a closed or self-contained volume that is not open to the atmosphere—is inconsistent with the specification. The Court instead concludes that Plaintiff’s proposed construction is consistent with the ordinary meaning of the phrase and is supported by the intrinsic

evidence. Thus, “outlet volume” is construed as “the volume of pressurized gas (e.g. compressed air) in the outlet section of the charging reservoir.”

I. “storage volume”

The parties dispute the meaning of the phrase “storage volume” as it appears in Claim 13. (’033 Patent at c. 11, ll:5-8.) Claim 13 reads in part: “A method for seating a bead of a tubeless tire on a rim comprising the steps of: a) providing a control volume, an outlet volume with an outlet and a storage volume” (*Id.*)

Plaintiff submits that “storage volume” is properly construed as “the volume of pressurized gas (e.g. compressed air) in storage inflation tank.” Defendant submits that “storage volume” must be dimensioned to contain air at a predetermined pressure, meaning that it is capable of being a closed or self-contained volume that is not open to the atmosphere.

For reasons similar to those discussed above, the Court concludes that Plaintiff’s proposed construction is consistent with the ordinary meaning of the phrase and is supported by the intrinsic evidence. Thus, “storage volume” is construed as “the volume of pressurized gas (e.g. compressed air) in the storage or inflation tank.”

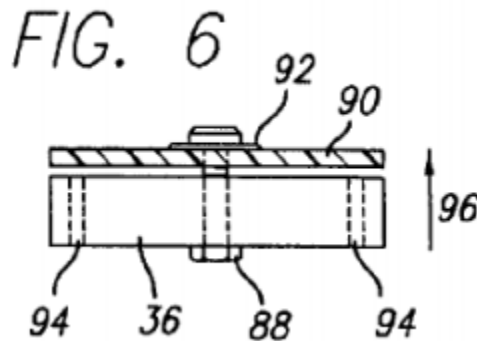
J. “flexible gasket”

The parties dispute the meaning of the phrase “flexible gasket” as it appears in dependent Claim 7. (’033 Patent at c. 10, ll:37-39.) Claim 7 reads: “The apparatus of claim 1 wherein said piston further comprises a flexible gasket attached at least one side of said piston, wherein said flexible gasket serves to permit airflow to pass in substantially only one direction.” (*Id.*)

Plaintiff submits that this phrase is properly construed as “a flexible device for sealing off the flow of a pressurized gas (e.g. compressed air). An O-ring, for example, is a form of flexible gasket.”

Defendant contends that a proper construction of “flexible gasket” requires that the gasket is connected or joined as by a bolt to the side of the piston (as opposed to the perimeter of the piston). In support, Defendant points to a portion of the Description that references the use of “gasket **90** and hole **94** as shown in FIG. 6,” wherein Figure 6 shows the placement of the gasket on the side of the piston (as opposed to the perimeter of the piston). (*Id.* at c. 7, ll:34-35 & FIG. 6.) Defendant argues that placing the gasket on one side of the piston allows the gasket to function as a one-way (check valve) facilitating airflow through a “plurality of holes **94**” and “in direction **96** but not in the reverse path.” (*Id.* at c. 7, ll:51-57.)

Figure 6 is a side view of an alternative embodiment of the piston:



The alternative embodiment for piston **36** shown in FIG. 6 features an aluminum disk, again about $\frac{3}{4}$ inches thick so that piston **36** will not wobble or bind when piston **36** slides inside of charging reservoir **22**.

As noted above, air is able to leak past piston **36** in either direction using the preferred embodiment. However, piston **36** could also be configured as

a one-way (check) valve by the addition of gasket **90** which is attached to piston **90** via flat washer **92** and bolt **88**.

(*Id.* at c. 7, ll:40-56 & FIG. 6.)

This portion of the specification only describes one possible option for configuring the piston. Defendant has not pointed to any evidence suggesting that the patentee limited the claims to this one particular embodiment. In addition, Defendant cannot overcome the heavy presumption that the claim term “flexible gasket” carries its ordinary meaning by pointing to an embodiment or other structures disclosed in the specification. *See Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002).

The Court concludes that the ordinary meaning of the claim term “flexible gasket” is “a piece of rubber or some other material that is used to make a tight seal between two parts that are joined together.” In context of the claim language, the Court construes the claim as “a flexible device for sealing off the flow of a pressurized gas (e.g. compressed air).” The Court finds no basis, however, to specify that an O-ring is an example for a flexible gasket and, therefore, does not include that in the construction.

K. “such that filling the control section of said charging reservoir . . .”

Gaither seeks construction of the following phrase that appears in claims 1-5, 7, 10-12 of the '033 Patent:

such that filling the control section of said charging reservoir with pressurized air via the fill/quick-release port, causes said piston to be releasably urged against the outlet of the outlet section of said charging reservoir substantially preventing the pressurized air from exiting the outlet in the outlet section of the charging reservoir while permitting the pressurized air to bypass said piston to fill said inflation tank and the outlet section of said charging reservoir so that air pressure within the outlet and

control sections of said charging reservoir and said inflation tank are at substantially the same pressure . . .

(*See, e.g.*, '033 Patent at c. 9, ll:66 – c. 10, ll:10.) Defendant submits that a proper construction of this phrase requires that after discharge and prior to commencement of filling the control section with pressurized air, the piston is not releasably urged against the outlet section of said charging reservoir. Specifically, Defendant asserts that the claim language should require that: (1) when unpressurized, the piston is away from the outlet of the charging reservoir; (2) while filling the control section of the charging reservoir, pressurized air must leak from the control section and bypass the piston to fill the inflation tank; and (3) the pressurized air is introduced first into the control section and then into the outlet section of the charging reservoir and inflation tank and only by leaking from the control section past the piston.

In support, Defendant relies in part on the following language in the '033 Patent:

Once the pressurized air in the quick-release section is released, the pressure differential is reversed and the piston is propelled away from the outlet section, thereby explosively releasing the air from the outlet section and the connected portable tank as a single pneumatic pulse.

(*Id.* at Abstract.)

When the pressurized air in said charging reservoir is quickly released via the fill/quick-release port of said charging reservoir, said piston substantially instantaneously moves away from the outlet of said charging reservoir.

(*Id.* at c. 3, ll:58-62.)

When said charging reservoir and said inflation tank is pressurized with air via the fill/quick-release port of said charging reservoir, said piston is

moveably urged against the outlet of said charging reservoir.

(*Id.* at c. 3, ll:51-54.)

Since the piston is a loose fit, air is able to slowly leak past the piston and fill the outlet section of the charging reservoir and the portable tank that is connected to the inlet.

(*Id.* at Abstract.)

The Court declines to construe the phrase as requested by Defendant. First, construction of the entire phrase would likely only serve to confuse the jury; instead, the Court's approach has been to limit construction to disputed terms. Second, Defendant attempts to limit the phrase so as to require the piston to be in a particular location before and after pressurized air is introduced (in an unpressurized state). However, there is nothing in the claim language or specification that would require such a limitation. Indeed, the intrinsic record is silent as to the position of the piston in an unpressurized apparatus. Moreover, the portions of the specification relied on by Defendant in support of its limitation relate to the operation of the preferred embodiment, and even considering the cited portions of the specification, Defendant's position is based on inferences drawn from the description of the embodiment. It would be improper to limit the claims based on those inferences. *See, e.g., Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 992 (Fed. Cir. 1999).

Even considering the proposed limitations with respect to the preferred embodiment, claim 1 requires that a piston is "moveably disposed within the control section of said charging reservoir." ('033 Patent at c. 9, ll:62-63; *see also id.* at Abstract ("[T]he piston is a loose fit.")). The patent specification further provides that "the

preferred embodiment of piston **36** permits air flow to leak past the piston **36** in either direction . . .” (*Id.* at c. 6, ll:47-48.) Based on the above evidence, when the preferred embodiment is unpressurized, the piston can move freely within the charging reservoir. There is no requirement that it be in any particular position.

The Court declines to construe the phrase.

L. “filling the control volume with pressurized air which causes the outlet of said outlet volume to be closed”

Defendant seeks construction of the following phrase that appears in claim 13 of the '033 Patent: “filling the control volume with pressurized air which causes the outlet of said outlet volume to be closed.” ('033 Patent at c. 11, ll:13-14.) Defendant submits that a proper construction of this phrase requires that prior to the commencement of filling the control volume with pressurized air, the outlet of the outlet volume is not closed. Thus, Defendant submits that this claim element requires that when the apparatus has been discharged and is in an unpressurized state, the outlet of the outlet volume is not closed. Defendant also submits that the pressurized air must be introduced first into the control volume and then into the outlet volume and storage volume.

For the same basic reasons discussed above, the Court declines to construe the claim as requested by Defendant. There is nothing in the claims or the specification that supports a limitation that requires the outlet to be in a certain position (“not closed”) when the apparatus is unpressurized.

M. “a charging reservoir having a port”

Defendant proposes that this phrase be construed similarly to “a charging reservoir having a control section with a combination fill/quick-release port” and relies on the same arguments in support of the construction of that term.

Based on the Court’s construction of the terms above, the Court declines to construe this term.

N. “pressurized air introduced into said charging reservoir causes said control member to substantially close the outlet while filling the charging reservoir and the storage tank by air leaking past said control member until a predetermined pressure is reached”

Defendant seeks a construction of this entire phrase as it appears in claim 18 so as to require that prior to pressurized air being introduced into said charging reservoir, said control member does not substantially close the outlet while filling the charging reservoir and the storage tank by air leaking past said control member until a predetermined pressure is reached. Defendant’s proposed construction of this term is similar to the construction of “filling the control section of said charging reservoir with pressurized gas . . .” as discussed above.

For the same reasons discussed above, the Court declines to construe the claim as requested by Defendant. Neither the claims nor the specification supports a limitation that requires the outlet to be in a certain position (“not closed”) when the apparatus is unpressurized.

ORDER

Therefore, **IT IS HEREBY ORDERED** that the claims at issue are construed as set forth in this Memorandum Opinion and Order.

Dated: November 23, 2015

s/Donovan W. Frank
DONOVAN W. FRANK
United States District Judge